

DescriptionA special chamfered tile and the procedure for its manufactureTechnical Field

5 The present invention relates to a special chamfered tile and the procedure for its manufacture.

10 The manufacture of stoneware and ceramic floor and wall tiles is normally carried out by highly automated systems which are capable of producing large numbers of tiles of the same type. Since a change in format, design and/or decoration of the tiles being produced involves stopping the system and modifying parts of the equipment, the production line is generally avoided for trim pieces like, for example, the rectangular tiles used when laying frames and skirting which match the floor or wall tiles.

Background Art

15 It is known that the aforementioned articles are manufactured by means of the mechanical cutting and working of standard wall and floor tiles. For example, the standard tiles of a square type are cut to form rectangular or chamfered trim pieces or those which have at least one rounded edge to form the so-called "bird's beak" which, once the piece is laid, constitutes the visible edge of a frame or skirting which matches the floor or wall made of standard tiles.

20 Naturally, the mechanical working of the standard tiles to produce trim pieces, i.e. the cutting and the subsequent bevelling or rounding, exposes, in the area worked on, the substratum of the tile itself, which could be single fired, porcelain stoneware, double fired, porous single fired, or manufactured using other commonly known materials from the sector. Given that aesthetic appearance is an important aspect of this 25 specific sector it therefore appears necessary to treat the area to be worked on to provide it with the finishing features which are comparable to those of the standard tiles from which they originate. The commonly known treatments envisage the glazing of the area worked on with ceramic glazes and the subsequent firing of the trim pieces 30 according to the methods adopted for the manufacturing of the basic standard tiles.

35 However, the said commonly known procedure has various drawbacks, the first being the high production costs which are due to the time needed for the firing of trim pieces. Another drawback comes from the fact that the firing of trim pieces in kilns can cause alterations in the 40

tones and/or the geometry which are unacceptable and may also cause cracks and breakages and therefore working scraps.

### Disclosure of Invention

5 The aim of the present invention is to overcome the drawbacks described above by means of a production process for special chamfered tiles with which have the features indicated in claim 1 of the following section. The invention is also aimed at a special chamfered tile which is derived from the aforementioned innovative process and has the features indicated in claim 8 of the following section. Finally, the invention is aimed at a trim piece production line as indicated in claim 10 7.

15 Further characteristics and advantages of the present invention will better emerge from the detailed description of a preferred embodiment that follows, in the form of a non limiting example, with particular reference to the figure enclosed, in which:

20 the figure is a perspective view of a special chamfered tile according to the invention.

25 With particular reference to the figure mentioned, a special tile 1 is produced, preferably by cutting transversally, according to the cutting plan, a basic floor or wall tile 2, as indicated by the arrows T-T.

30 The special tile 1 therefore also includes a front surface 3 decorated with the same motive as the basic tile 2. At least one of the long edges 5a, 5b of the special tile 1 is chamfered, bevelled or rounded to form the so-called 'bird's beak' 4 which, once the special tiles 1 are laid, remains in view.

35 The 'bird's beak' 4 is subsequently painted cold with a double component polyurethane paint to obtain a surface finish which is generally similar to or co-ordinated with the finishing and decoration of the front surface 3. In addition to or as an alternative to the aforementioned glaze, the tile can be brought to the correct tone using pigmented primers, for example, those which are solvent based.

40 The finishing process for the bird's beak profile 4 should preferably include the following phases:

- a neutral epoxidic primer which acts as a fixative is applied by means of a commonly-known painting apparatus, such as an airbrush, in particular, but not limited to, a manual one;
- the special tile is then left for a pre-determined period, for example 24 hours, at room temperature or in a controlled environment at 20°C for a few hours, preferably two:

- a double component polyurethane painting product, which acts as a decorative surface finish, is then applied by means of a commonly known painting apparatus, such as an airbrush, in particular, but not limited to, a manual one;
- 5 - the special tile is dried for a pre-determined period of time, preferably in a controlled environment at 20°C for approximately two hours;
- the special tile is packed;
- 10 - the special tile production line can be at least partially automated and includes, in order:
  - a cutting station for the basic tile;
  - a chamfering station for at least one of the special tile's edges;
  - a station for the first application of the primer which acts as a fixative, including, for example, an apparatus with a manual airbrush;
  - 15 - a rest station with a ventilated compenser where the tile is left at approximately 20°C for approximately two hours;
  - a second station, including another apparatus with a manual airbrush, for the application of the surface finish, in particular the double component polyurethane paint;
  - a drying station with a second ventilated compenser where the tile is left at approximately 20°C for approximately two hours;
  - a packing station.
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With the procedure according to the present invention it is possible to reduce production times for basic tiles and co-ordinated special tiles dramatically, with a subsequent reduction in production costs.

Furthermore, the application of a painting product which is generally applied cold, prevents the morphological features, with regards the colour tones and the geometry of the tile's substratum, being altered, in this way guaranteeing a high quality finished product and a dramatic reduction in waste pieces.

In some particular cases, depending on the type of substratum of the basic tile, the intended use of the special tile and the features of the glazing product, it is even possible to avoid the primer application phase and the special tile's consequent intermediary resting phase, in this way reducing the production times and costs still further.

Obviously, by maintaining the principle of the present invention, various embodiments are possible and the relevant details can be varied widely with respect to this description and its illustration without falling outside the field of the present invention.